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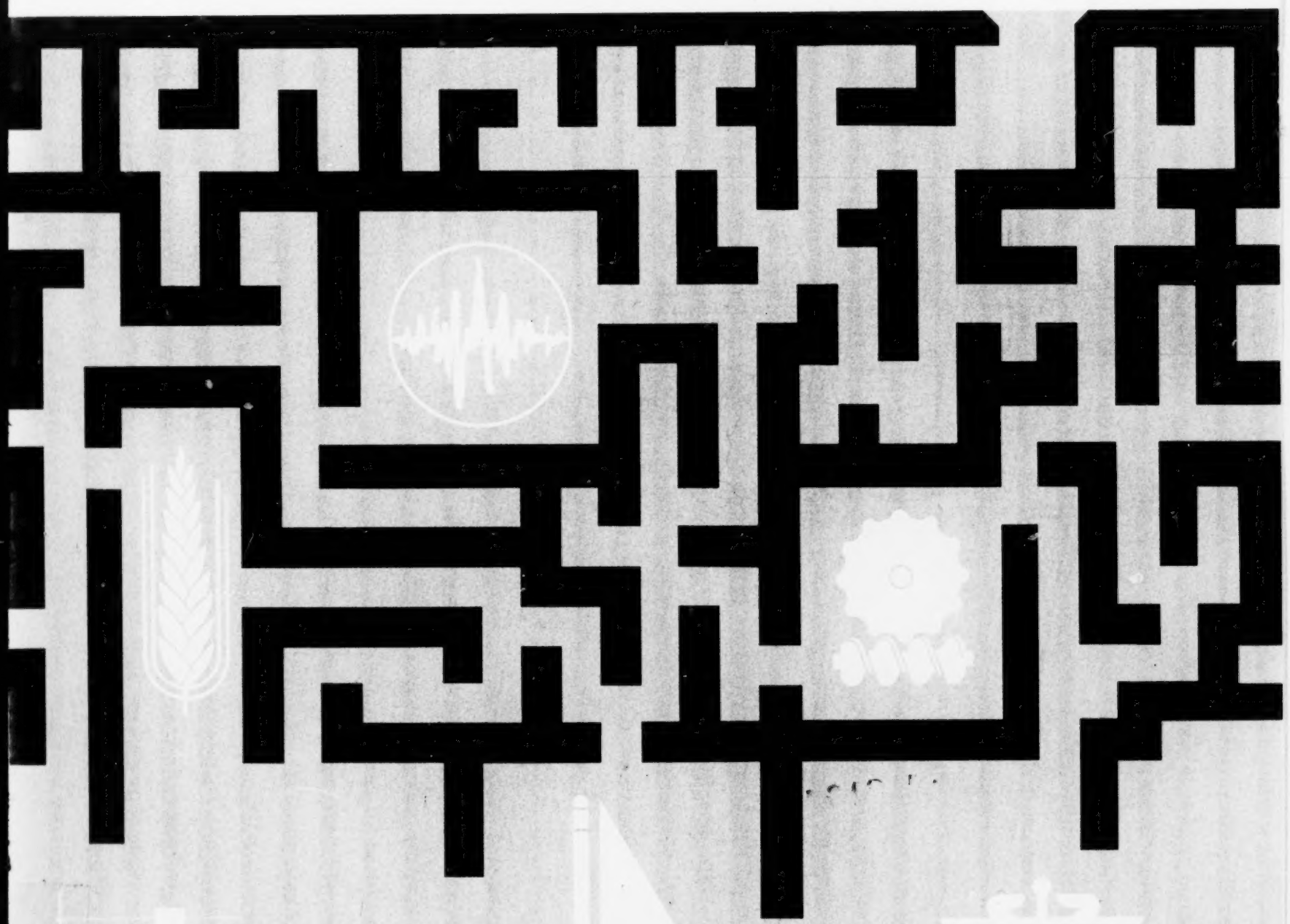
ABSTRACT

Presented in this document are data on post-secondary vocational education students as collected by means of the Vocational Development Inventory (VDI) and the Minnesota Scholastic Aptitude Test (MSAT). For training success norms, 27 occupational groups were separated into three clusters on the basis of sex (primarily male, both male and female, and primarily female curriculums). For employment success norms, developed on a subset of the population used for training success norms, 13 occupational groups were clustered on the basis of sex. Included is information on: (1) Project MINI-SCORE Occupational Training Program Groups, (2) VDI Profiles--Training Success Norms, (3) MSAT Profiles--Training Success Norms, (4) MSAT Profiles--Employment Success Norms, (5) VDI and MSAT (Form A), Standard Deviations and Number of Observations for Groups Used In Preparing Training Success Norms, (6) Student Profile Sheet--VDI Score, (7) Student Profile Sheet--VDI Score, and (8) Student Profile Sheet--MSAT Score. Also included is information on using the prepared profile sheets in counseling. Related documents are available as VT 016 148-VT 016 150, and VT 016 152. (JS)

PROJECT MINI-SCORE
FINAL TECHNICAL REPORT

MINNESOTA SCHOLASTIC APTITUDE TEST and VOCATIONAL DEVELOPMENT INVENTORY Training Success Norms and Employment Success Norms



PROJECT MINI-SCORE FINAL TECHNICAL REPORT:

MINNESOTA SCHOLASTIC APTITUDE TEST AND VOCATIONAL DEVELOPMENT INVENTORY TRAINING SUCCESS NORMS AND EMPLOYMENT SUCCESS NORMS

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Project MINI-SCORE
(Minnesota Student Characteristics and Occupationally Related Education)
Department of Industrial Education
University of Minnesota
March, 1972

FOREWORD

This technical report is one of the technical reports of Project MINI-SCORE which summarize the findings of six years of intensive research into possible relationships between standardized test measures and a number of different criteria of vocational student success. The technical reports present a detailed discussion of Project findings. A general discussion of the major findings can be found in the publication entitled PROJECT MINI-SCORE FINAL REPORT.

Through Project MINI-SCORE, test data consisting of measures derived from six separate instruments and test batteries were gathered on individual applicants to the area vocational-technical schools of Minnesota. The tests included in the battery were: (1) the General Aptitude Test Battery (Form B) written portions only, (2) the Minnesota Vocational Interest Inventory, (3) The Sixteen Personality Factor Questionnaire (Form C), (4) the Minnesota Importance Questionnaire (30-scale version), (5) the Vocational Development Inventory, and (6) the Minnesota Scholastic Aptitude Test. In additon, personal descriptive data were obtained from the students through the use of a questionnaire. The data from these instruments were analyzed to determine which of the information gathered would be useful in counseling individuals with reference to full-time, post-high school vocational-technical courses offered in the area vocational-technical schools of Minnesota. Measures of vocational student success included in the Project were: (1) reported graduation versus dropping out of programs, (2) employment status one year after graduation, (3) job satisfaction one year after graduation, and (4) job satisfactoriness one year after graduation.

The titles of all of the final technical reports of the Project can be found on the back cover of this report. Additional publications of Project MINI-SCORE which have dealt with some of the critical issues in vocational education research are listed on the last page. Limited numbers of copies of these reports are available.

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REVIEW OF THE VOCATIONAL DEVELOPMENT INVENTORY (VDI)[1]

The Vocational Development Inventory (VDI) was developed by John O. Crites at the University of Iowa (Crites, 1969). The VDI was designed to assess a combination of five aspects of vocational maturity: ". . .(1) involvement in the process of vocational choice, (2) orientation toward the problem of vocational choice, (3) independence in decision-making, (4) preferences for factors in vocational choice, and (5) conceptions of vocational choice." (Crites, 1969, p. 6) The instrument contains fifty true-false items which result in one score that is directly related to age and grade level. It was originally developed for use with students in grades five through twelve. Two scales were to be developed, an "attitude" scale and a "competence" scale. Only the attitude scale was included in Project MINI-SCORE since the competence scale was not completed at the time the Project was initiated. Crites has indicated that the attitude scale objectively measures individual differences in the maturity of vocational attitudes.

REVIEW OF THE MINNESOTA SCHOLASTIC APTITUDE TEST (MSAT)[2]

The Minnesota Scholastic Aptitude Test (MSAT) was developed to provide a single score useful in predicting how well students will do in college. It consists of 78 items and requires 50 minutes testing time. A modification of the Ohio State Psychological Examination, in 1958 it replaced the 1952 college edition of the ACE, formerly used in the State-Wide College Testing Program

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[1]The information in this section was abstracted from: John O. Crites, The Maturity of Vocational Attitudes in Adolescence; Iowa City, Iowa, the University of Iowa, 1969.

[2]The information on MSAT is from: Ralph F. Berdie and others, Counseling and the Use of Tests: A Manual for the Statewide Testing Programs of Minnesota; Minneapolis, Minnesota, the Student Counseling Bureau, University of Minnesota, 1962.

in Minnesota. On each page of the test the student first encounters a reading passage, followed by questions based on the passage. He then attempts same-opposites and analogies items, which measure his vocabulary and understanding of the relationship of words. The test was developed to be used with high school juniors.

DEVELOPMENT OF PROJECT MINI-SCORE TRAINING SUCCESS NORMS AND EMPLOYMENT SUCCESS NORMS

Occupational Groups Included in the Study

Project MINI-SCORE has gathered data on sixty-three different occupational training program groups. The training programs were grouped by personnel from the Minnesota State Department of Vocational Education and the Department of Industrial Education at the University of Minnesota into relatively homogeneous groupings. In many cases, the specific titles given to training programs in a given group are different but the training programs are relatively the same. Each of the group names and the specific titles of training programs falling into a group can be found in Appendix A.

Training Success Norms Population and Occupational Groups

The "training success" norms (see Appendices B and D) in this report were developed with data obtained from students who were accepted to and graduated from full-time, day programs offered in the twenty-four cooperating post-high school area vocational-technical schools of Minnesota during the period from September 1, 1966, until July 1, 1970. Profiles have been prepared only for those occupational groups for which VDI data were available for at least forty-nine individuals. The same groups were used for the MSAT profiles even though these groups were slightly smaller because not all people who had VDI scores had MSAT scores. Minnesota Scholastic Aptitude Test

scores were only available on people who had been high school juniors in Minnesota since 1955. This means that persons who attended high school before that time or were high school drop-outs prior to their junior year did not have MSAT scores. The actual sample used in developing each norm profile is indicated in Appendix F.

The present publication includes twenty-seven occupational groups. The twenty-seven groups have been separated into three clusters on the basis of sex. This classification system is based on Project MINI-SCORE research which showed differences on many of the measures included in the Project MINI-SCORE test battery which were due to sex (see Pucel and others, 1972).

CLUSTER I

PRIMARILY MALE CURRICULA

Agri-Technology
Aircraft Mechanics
Architectural Drafting
Automotive
Carpentry
Chefs and Cooks
Diesel Mechanics
Electronics
Farm Equipment Mechanics
Fluid Power Technology
Machine Shop
Mechanical Drafting and Design
Mechanical Refrigeration, Air Conditioning and Appliance Repair
Plumbing and Sheet Metal
Power and Home Electricity
Printing and Graphic Arts
Welding

CLUSTER II

CURRICULA WITH BOTH MALE AND FEMALE

Accounting
Data Processing
Interior Design and Sales Assistant
Sales

CLUSTER III

PRIMARILY FEMALE CURRICULA

Clerical Training
Cosmetology
Dental Assistant
Medical Laboratory Assistant
Practical Nursing
Secretarial Training

Employment Success Norms Population and Occupational Groups

The "employment success" norms (see Appendices C and E) were developed on a subset of the population used for the training success norms. The

population included people who were accepted to and graduated from the full-time, day programs of the twenty-four cooperating schools who were followed up on the job one year after training between September 1, 1966, and July 15, 1970. Of the people who were followed up on the job, only those who were employed in a job related to their training (based on the Project MINI-SCORE classification system presented in Appendix A) were included in the groups used to generate the employment success norms. (The "employment success" norms in this report could also be called "on-the-job norms.") Profiles have been prepared for all occupational groups for which at least fifty individual sets of VDI data were available. The same groups were used for MSAT profiles. The actual sample used in developing each norm profile is indicated in Appendix G.

Employment success norms (on-the-job success norms) have been developed for thirteen occupational groups which have been clustered on the basis of sex.

CLUSTER I

PRIMARILY MALE CURRICULA

Automotive
Carpentry
Electronics
Machine Shop
Mechanical Drafting and Design
Power and Home Electricity
Welding

CLUSTER II

CURRICULA WITH BOTH MALE AND FEMALE

Accounting
Data Processing

CLUSTER III

PRIMARILY FEMALE CURRICULA

Clerical Training
Cosmetology
Practical Nursing
Secretarial Training

INTERPRETING THE NORMS

Cautions

AS WITH THE INTERPRETATION OF ANY NORMS THAT ARE TO BE USED IN THE COUNSELING PROCESS, PERSONS USING THE NORMS ARE CAUTIONED AGAINST USING THEM AS

ABSOLUTES. THEY SHOULD BE USED AS COUNSELING TOOLS BY QUALIFIED PERSONNEL. A FURTHER CAUTION IS TO REMIND USERS THAT IF A PERSON HAS A VDI SCORE OR AN MSAT SCORE SIMILAR TO THAT OF AN OCCUPATIONAL GROUP, THIS DOES NOT INDICATE HIS COMPETENCE TO PERFORM IN THE OCCUPATION.

Description of the Profiles

The profiles were developed from tabular data indicating the percentile associated with each score. The lightweight line represents the range between the 5th and 95th percentiles (see Appendices B, C, D and E). The top and bottom five percent were eliminated to avoid having to consider extremely high or low scores. The bold bar represents the middle two-thirds of the scores that were obtained most often by people who successfully completed a training program or who were employed in related occupations. The middle two-thirds was identified by using the percentiles. The top of the bar is located at the 83.5 percentile and the bottom of the bar is located at the 16.5 percentile. The percentiles were used in developing the profiles rather than the means and standard deviations, because the percentiles are sensitive to skews in the distributions. However, the means and standard deviations of the raw scores are presented in Appendices F and G for each training program along with the number of scores which went into each calculation. The MSAT profiles represent scores which were converted from MSAT Form A scores to MSAT Form C scores. The table used to convert the scores is presented in Appendix H. The conversion was necessary due to the adoption of MSAT Form C by the Minnesota Statewide Testing Program since the 1966-67 school year. All of the Project MINISCORE MSAT data were obtained from the records of students who had taken Form A prior to that time. Therefore, the MSAT means and standard deviations presented in Appendices F and G were calculated with the Form A scores while the profiles in Appendices D and E represent Form C scores.

Preparing the Profile Sheets for Counseling

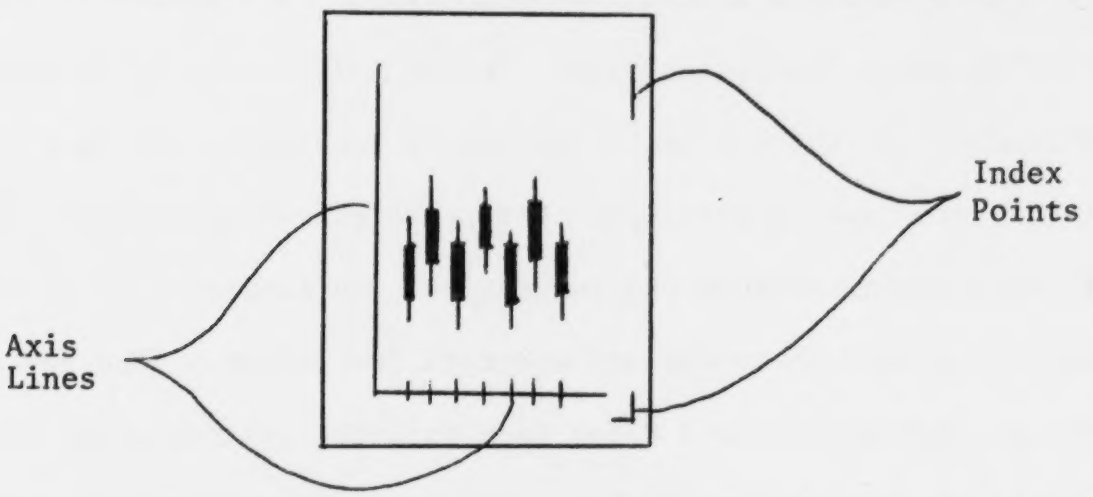
The profiles are organized in Appendices B through E according to the three major clusters for easy reference. A sample student profile sheet is included for VDI and also for MSAT.

First, transparencies should be made of the profile sheets. This can be done as follows:

a. Take the profile sheets out of the booklet.

b. Each profile sheet has two index points. Match the lower right-hand corner of the transparency material with the right angle index point in the lower right-hand corner of the profile sheet. Match the right-hand edge of the transparency material with the line index point in the upper right-hand corner of the profile sheet. Make the transparency.

c. After making transparencies of all of the profiles in a given cluster, punch all of the transparencies at once with a three hole punch.



d. Place the transparencies into a three ring binder. When looking through all of the transparencies in a given cluster at one time, all of the axis lines should match.

Second, duplicate the student profile sheets. To make additional copies of the student profile sheets, do the following:

a. Take the sample profile sheet out of the booklet.

b. Trim the profile sheet along the dotted line.

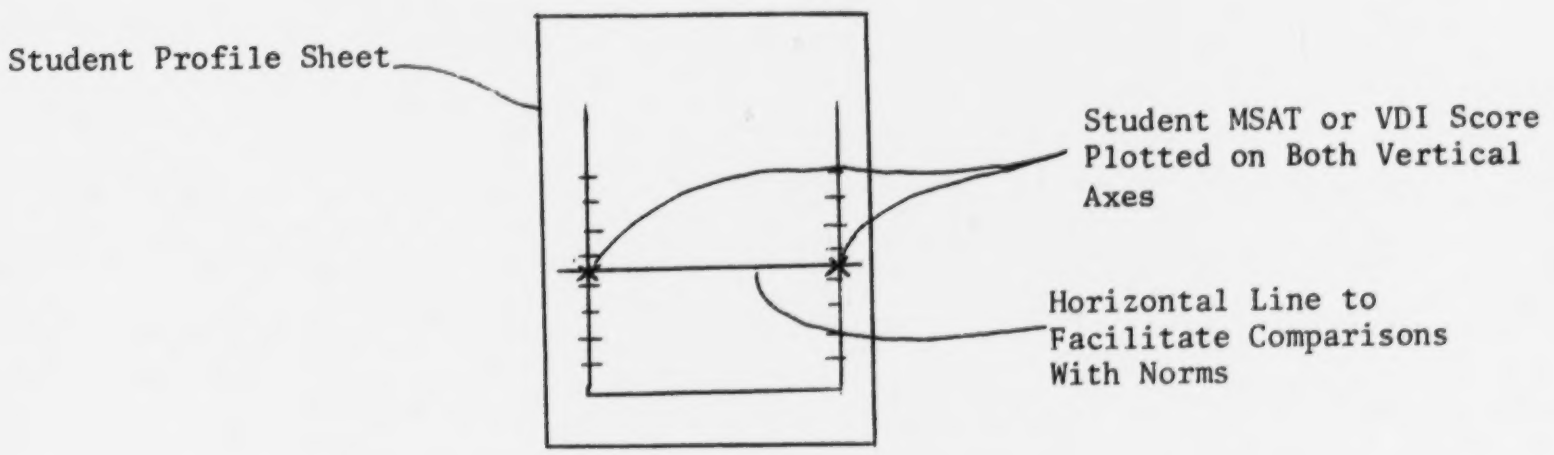
c. Duplicate the sheets after they have been trimmed. Make sure the left hand edge of the new sheets is the same distance from the axis lines as the dotted line is or was on the sample.

Using the Prepared Profile Sheets in Counseling

1. Administer the VDI or MSAT in accordance with the respective manual.

2. Plot the individual's raw score on a student profile sheet.

3. Place the individual's student profile sheet under each of the transparencies to determine how similar the individual's profile is to that of people who have successfully completed training or who have been successful on the job in each of the occupational areas. Note that the norms of more than one occupation are presented together on one page for VDI and MSAT. To compare a student's score with the various occupational norms, move the student's score sheet right or left under the transparency, keeping the horizontal axes of both lined up. Since there is only one score on the student score sheet, a horizontal line drawn through the student's score would facilitate these comparisons, and would eliminate the necessity of moving the student's score sheet left or right.[3]


Student Profile Sheet
Student MSAT or VDI Score Plotted on Both Vertical Axes
Horizontal Line to Facilitate Comparisons With Norms

It is recommended that each individual be allowed to make such comparisons himself with the counselor. If a person's profile does not fall within the bold portion of the VDI or MSAT profile stalks of a given occupational group, this does not mean he could not succeed in that occupaton. It only means that he is more different on the dimension measured by the VDI or MSAT than 66 percent of those who have successfully completed training or who have been successful on the job.

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[3]There is a good alternative method for using the VDI or MSAT norms with small groups. Since the norms profiles of all of the curricula are on only four profile sheets, these pages might be duplicated for each student; and the student VDI or MSAT score could then be plotted directly on these pages.

REFERENCES

Berdie, R. F. and others. Counseling and the Use of Tests: A Manual for the Statewide Testing Programs of Minnesota. Minneapolis, Minnesota: The Student Counseling Bureau, University of Minnesota, 1962.

Crites, J. O. The Maturity of Vocational Attitudes in Adolescence. Iowa City, Iowa: The University of Iowa, 1969.

Pucel, D. J., Nelson, H. F., and Mohamed, D. The Ability of Standardized Test Instruments to Predict Training Success and Employment Success. Minneapolis, Minnesota: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, March, 1972.

APPENDIX A

PROJECT MINI-SCORE OCCUPATIONAL TRAINING PROGRAM GROUPS

MECHANICS AND MACHINERY REPAIR

6. Automotive
   - Auto Mechanic
   - Auto Body Repair
   - Automobile Management
   - Automobile Technician

10. Diesel Mechanics
    - Diesel Mechanics
    - Diesel Mechanics Technician
    - Truck & Diesel Mechanics

13. Farm Equipment Mechanics
    - Farm Equipment Mechanics
    - Farm Mechanics I & II

18. Aircraft Mechanics
    - Aviation Mechanics

19. Service Station Mechanic
    - Automotive Services
    - Automotive Service Station Mechanics Attendant
    - Mechanical Repair & Servicement

25. Marine and Small Engine Mechanics

56. Heavy Equipment Operation and Repair

APPLIANCE & REFRIGERATION REPAIR

14. Appliance Repair

30. Office Machine Mechanic

32. Mechanical Refrigeration & Air Conditioning

7. PRINTING AND GRAPHIC ARTS

- Graphic Arts
- Graphic Arts I, Letter Press
- Graphic Arts II, Photolithography and Offset Printing

21. PLUMBING AND SHEETMETAL

22. FLUID POWER TECHNOLOGY

SELLING AND RELATED WORK

41. Sales
    - Sales Management
    - Sales & Marketing
    - Sales Training

46. Business Management

AGRICULTURAL RELATED OCCUPATIONS

37. Agri-Technology
    - Agri-Chemicals & Fertilizers, Sales & Service
    - Agricultural Technician (Animal Science)
    - Agricultural Technician (Plant Science)
    - Agricultural Sales Technician

42. Farm Equipment Sales
    - Farm Equipment Sales & Service
    - Partsman Training

50. Agri-Business
    - Agri-Business Management
    - Agri-Business Office Training

51. Farm Management

DRAFTING, ARCHITECTURAL, MECHANICAL AND TECHNICAL

8. Mechanical Drafting and Design
   - Engineering Drafting
   - Industrial Drafting
   - Industrial Drafting Technology
   - Machine Drafting
   - Mechanical Drafting
   - Technical Drafting
   - Design Technology
   - Drafting and Design Technology

9. Architectural Drafting

35. Highway Technology
    - Highway Technician
    - Highway Technology
    - Civil Technology

44. INTERIOR DESIGN & SALES ASSISTANT

FOODS

15. Chefs and Cooks
Cook, Institutional
Hotel and Restaurant Cooking

31. Bakery Procedures

52. Food Management
Management & Food Service

62. Butcher and Meat Cutting

ELECTRICITY AND ELECTRONICS

1. Electronics
Electronics
Electronics, Communications
Electronics, Computer Maintenance
Electronics, Industrial & Home Entertainment Service
Electronics, Industrial Technical
Electronics, Radio & Television
Electronics, Technician Communications
Electronics, Technician Industrial
Electronics, Technician
Electronics, Technology

2. Power and Home Electricity
Electrical
Electrical, Construction
Electrical Maintenance
Electrical Technology
Lineman Electrician
Power and Plant Operation

58. Telephone Communications

CONSTRUCTION INDUSTRY

4. Carpentry
Building Construction
Carpentry

28. Bricklaying

WOODWORKING INDUSTRY

4. Carpentry
Building Construction
Carpentry

20. Cabinet Making

MACHINE TRADE OCCUPATIONS

5. Tool and Die
Tool and Design Technician
Tool and Die Maker
Tool, Die, and Mold Maker

11. Machinist
Machine Operator
Machinist
Production Machinist

12. Welding

23. Pattern Maker

26. Plastic Injection Molding Technician

BUSINESS, ACCOUNTING, CLERICAL, SECRETARIAL

45. Accounting

47. Clerical Training
Clerical Record Keeping
Clerk, General Office
Clerk-Typist
Clerk-Typist Machine Operator

48. Secretarial Training
Educational Secretary
Hospital Station Secretary
Secretarial Training, General
Secretarial Training, Medical
Stenographic Training
Medical Office Assistant
Medical Office Service
Legal Secretary

49. Data Processing
Clerical Training & Data Processing
Clerical Training and Keypunch
Tabulating Machine Operator (Unit Records)

HEALTH SERVICES

3. Practical Nursing

33. Dental Assistant

39. Medical Laboratory Assistant

40. WRITING

JEWELRY AND WATCH REPAIR

27. Watch Repair

55. Jewelry

FURNITURE MAKING

20. Cabinet Making

29. Upholstering

OPTICAL AND MEDICAL LAB

38. Optical Technology

39. Medical Laboratory Assistant

GROOMING

17. Cosmetology

24. Barbering

CLOTHING

53. Needle Arts

54. Tailoring

57. Fashion Merchandising

FOREST INDUSTRIES

36. Paper & Pulp Technology

61. Conservation and Forestry

LANDSCAPE AND FLORISTRY

34. Nursery - Landscape Technology

43. Retail Floristry

16. SHOE REPAIRING

59. INTERNATIONAL DOCUMENTS SPECIALIST

60. LAW ENFORCEMENT

63. BROADCASTING

APPENDIX B

VDI PROFILES
TRAINING SUCCESS NORMS

page

CLUSTER I

PRIMARILY MALE CURRICULA. 13

Agri-Technology
Aircraft Mechanics
Architectural Drafting
Automotive
Carpentry
Chefs and Cooks
Diesel Mechanics
Electronics
Farm Equipment Mechanics
Fluid Power Technology
Machine Shop
Mechanical Drafting and Design
Mechanical Refrigeration, Air Conditioning,
and Appliance Repair
Plumbing and Sheet Metal
Power and Home Electricity
Printing and Graphic Arts
Welding

CLUSTER II

CURRICULA WITH BOTH MALE AND FEMALE 15

Accounting
Data Processing
Interior Design and Sales Assistant
Sales

CLUSTER III

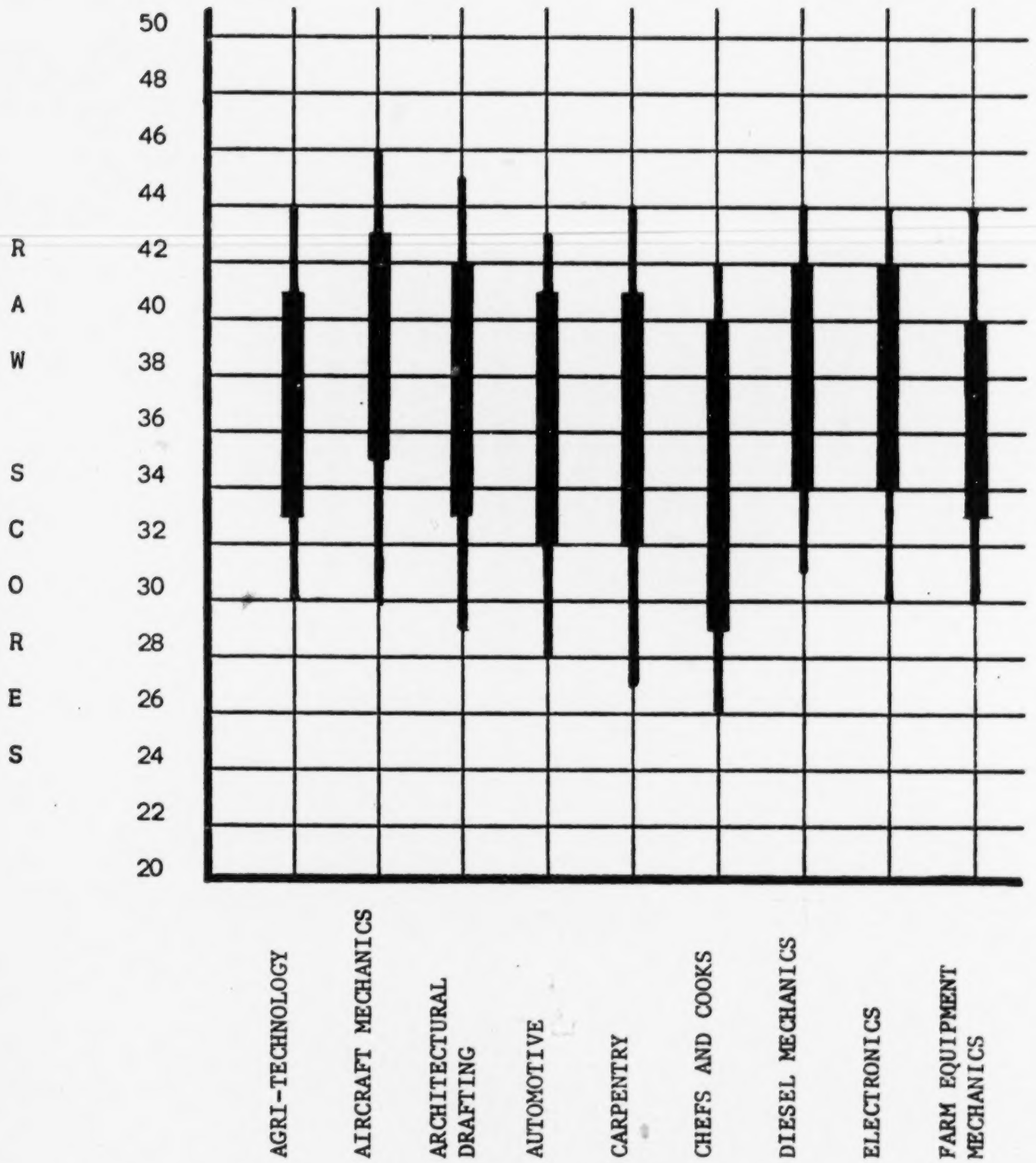
PRIMARILY FEMALE CURRICULA 15

Clerical Training
Cosmetology
Dental Assistant
Medical Laboratory Assistant
Practical Nursing
Secretarial Training

PROJECT MINI-SCORE TRAINING SUCCESS NORMS

VDI

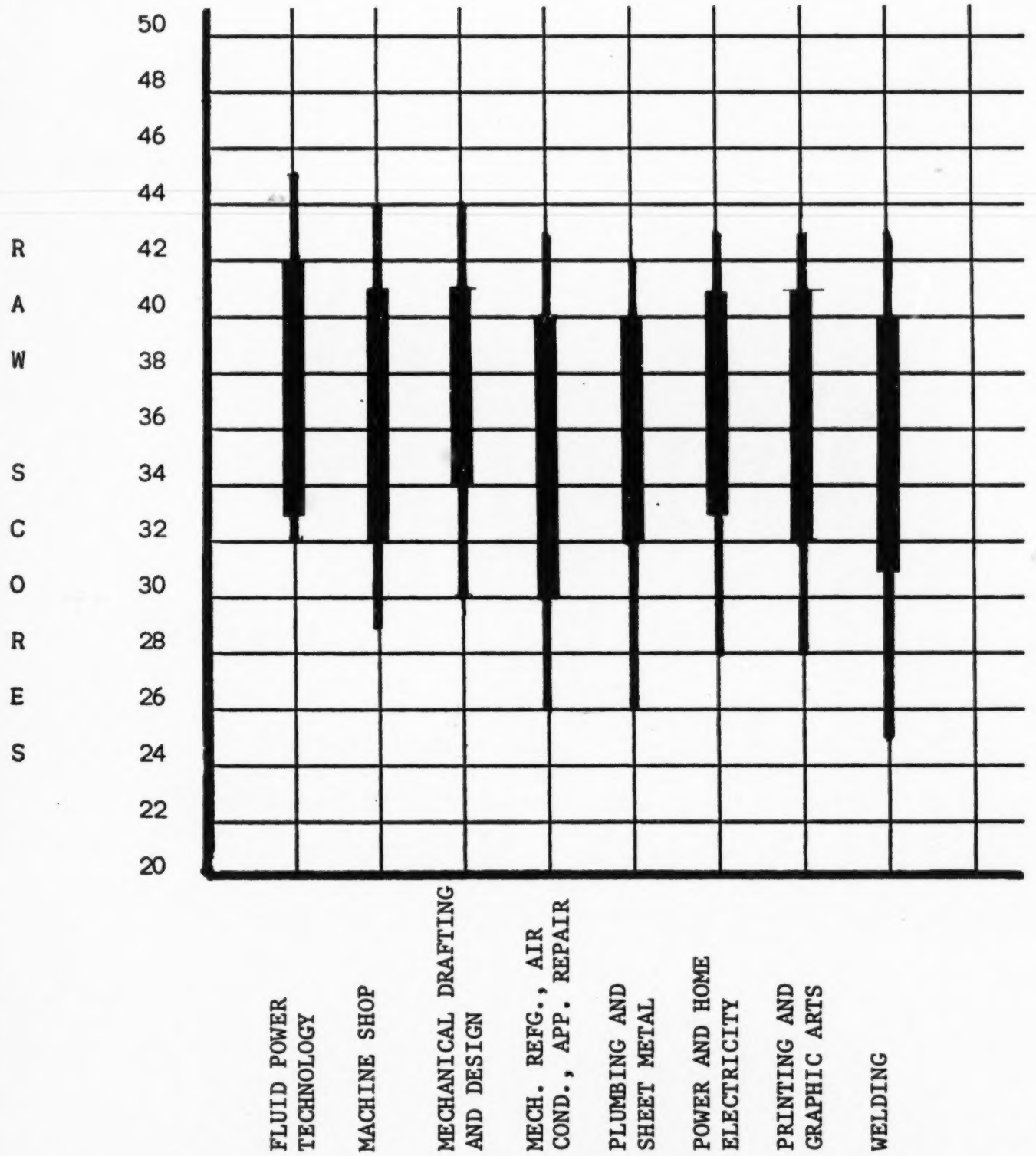
PROFILE SHEET



PROJECT MINI-SCORE TRAINING SUCCESS NORMS

VDI

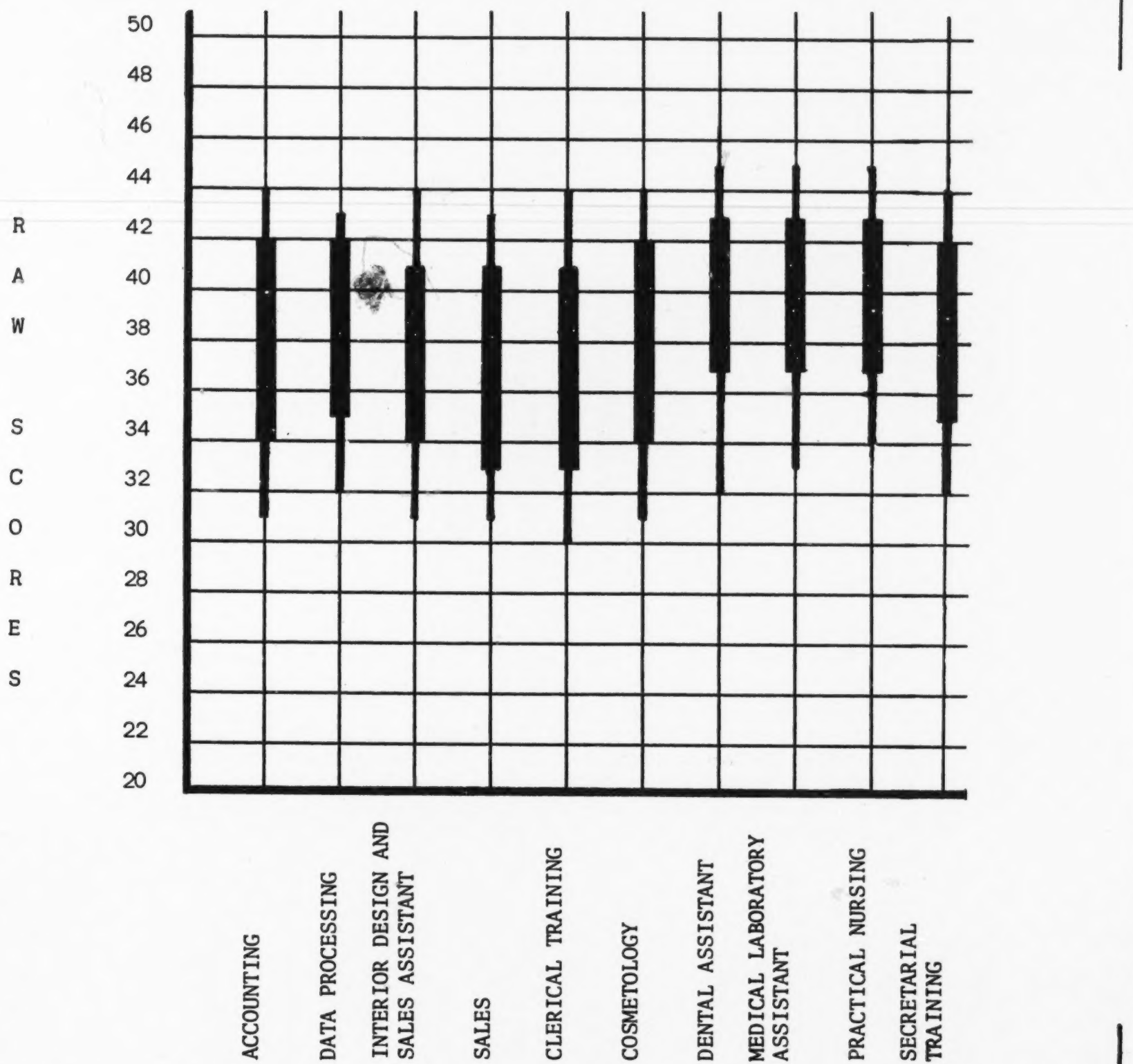
PROFILE SHEET



PROJECT MINI-SCORE TRAINING SUCCESS NORMS

VDI

PROFILE SHEET



APPENDIX C

VDI PROFILES
EMPLOYMENT SUCCESS NORMS

page

CLUSTER I

PRIMARILY MALE CURRICULA 17

Automotive
Carpentry
Electronics
Machine Shop
Mechanical Drafting and Design
Power and Home Electricity
Welding

CLUSTER II

CURRICULA WITH BOTH MALE AND FEMALE 17

Accounting
Data Processing

CLUSTER III

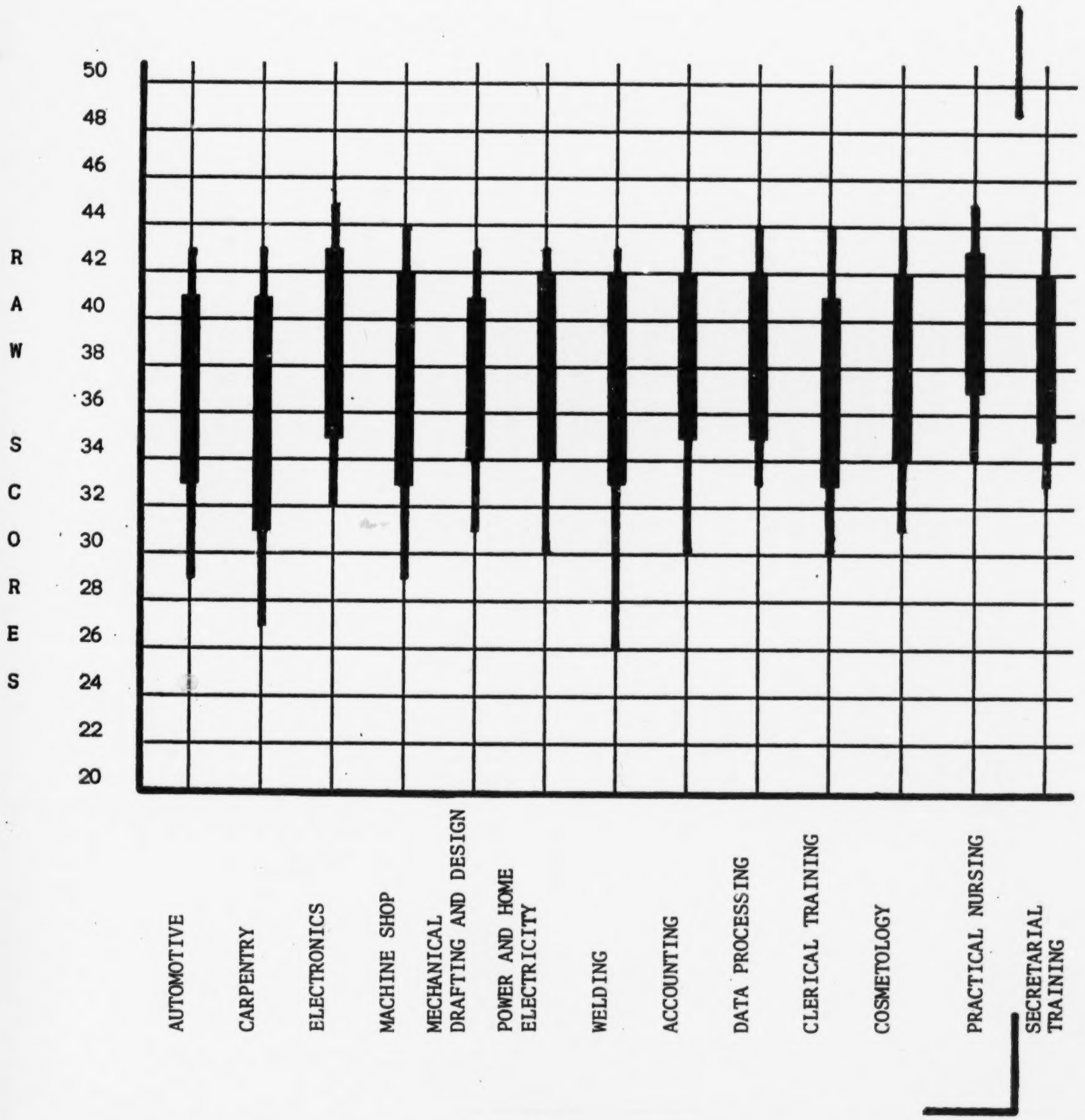
PRIMARILY FEMALE CURRICULA. 17

Clerical Training
Cosmetology
Practical Nursing
Secretarial Training

PROJECT MINI-SCORE EMPLOYMENT SUCCESS NORMS

VDI

PROFILE SHEET



APPENDIX D

MSAT PROFILES
TRAINING SUCCESS NORMS

page

CLUSTER I

PRIMARILY MALE CURRICULA 19

Agri-Technology
Aircraft Mechanics
Architectural Drafting
Automotive
Carpentry
Chefs and Cooks
Diesel Mechanics
Electronics
Farm Equipment Mechanics
Fluid Power Technology
Machine Shop
Mechanical Drafting and Design
Mechanical Refrigeration, Air Conditioning,
and Appliance Repair
Plumbing and Sheet Metal
Power and Home Electricity
Printing and Graphic Arts
Welding

CLUSTER II

CURRICULA WITH BOTH MALE AND FEMALE . . . 21

Accounting
Data Processing
Interior Design and Sales Assistant
Sales

CLUSTER III

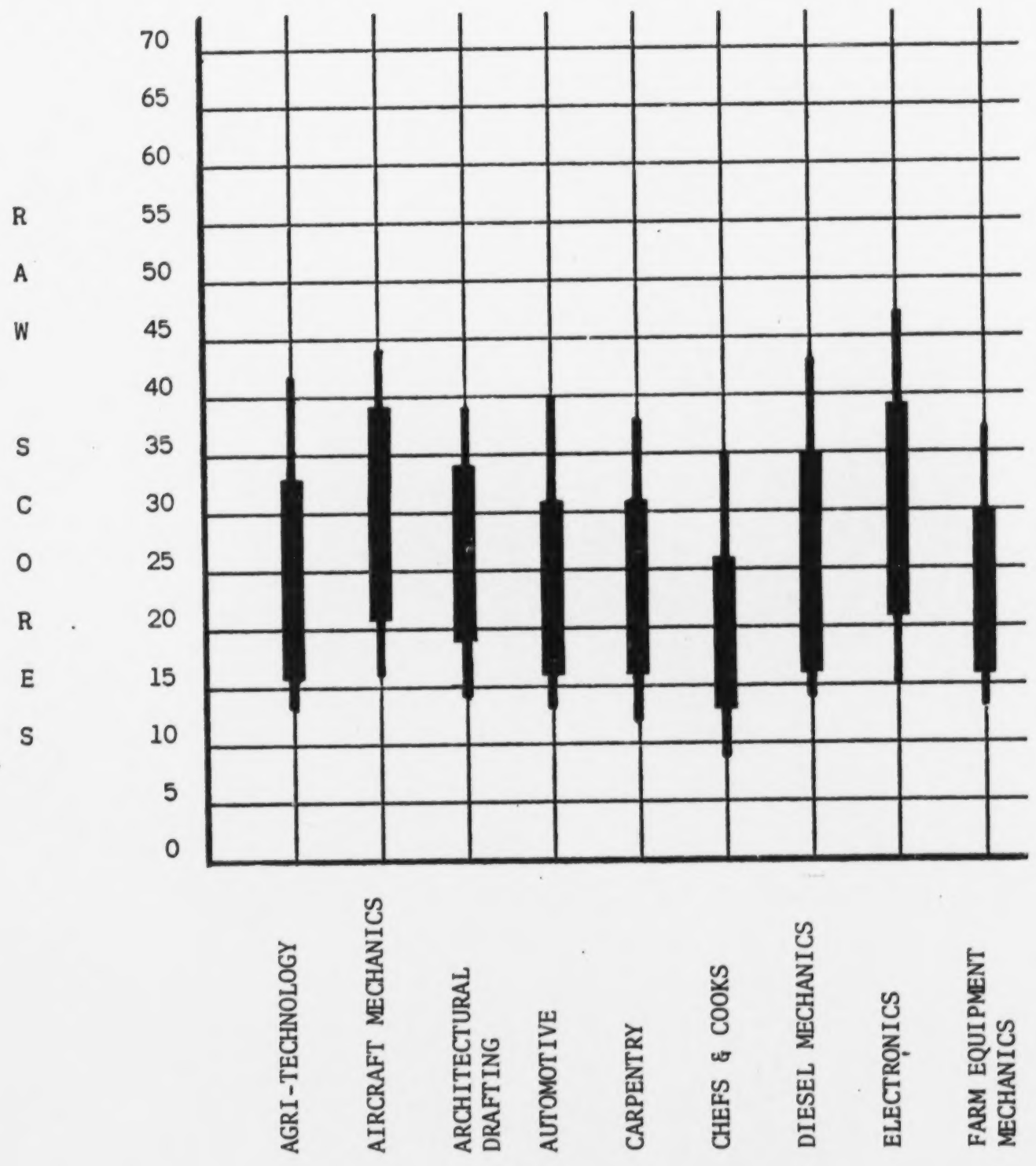
PRIMARILY FEMALE CURRICULA. 21

Clerical Training
Cosmetology
Dental Assistant
Medical Laboratory Assistant
Practical Nursing
Secretarial Training

PROJECT MINI-SCORE TRAINING SUCCESS NORMS

MSAT - FORM C

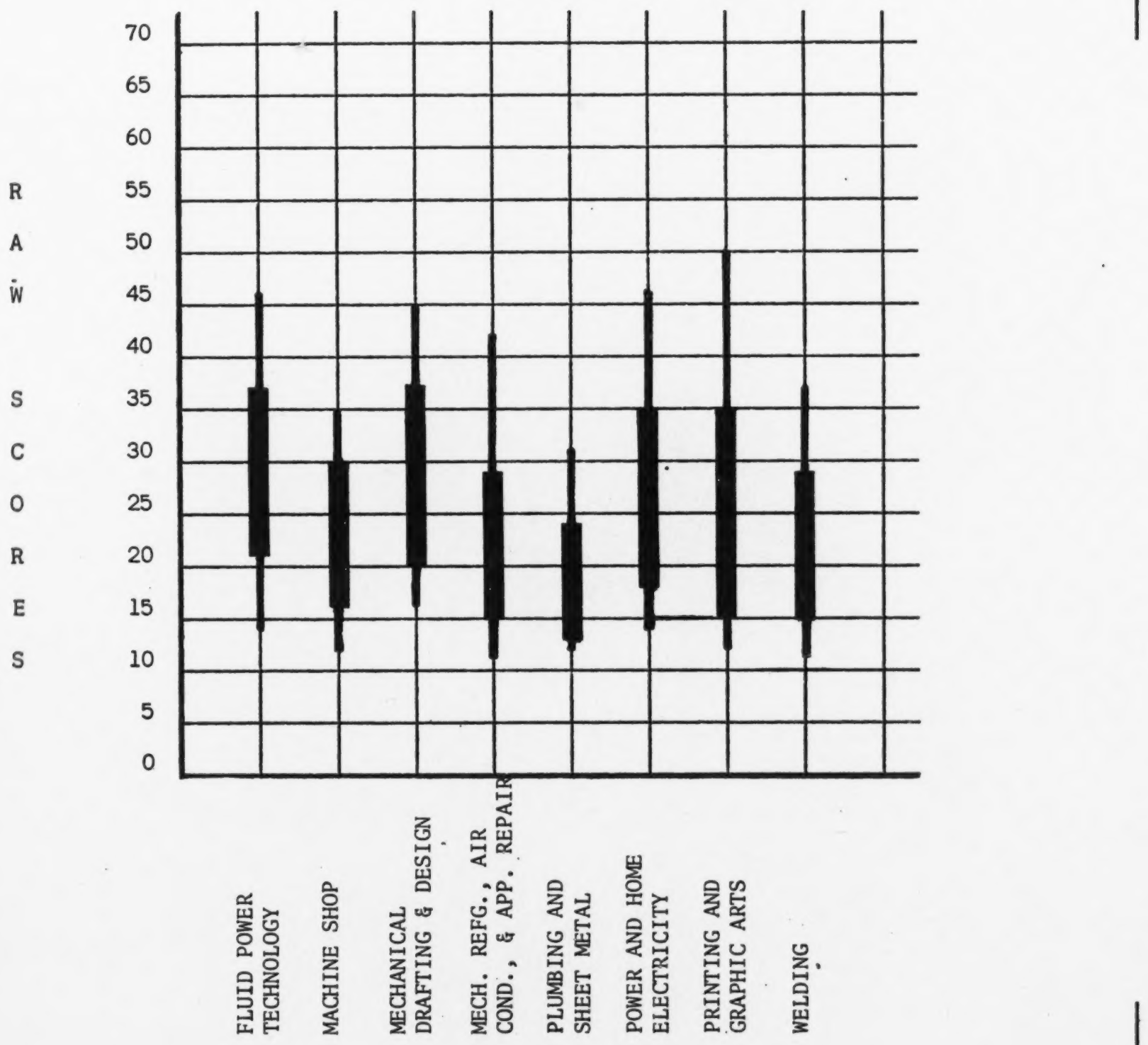
PROFILE SHEET



PROJECT MINI-SCORE TRAINING SUCCESS NORMS

MSAT - FORM C

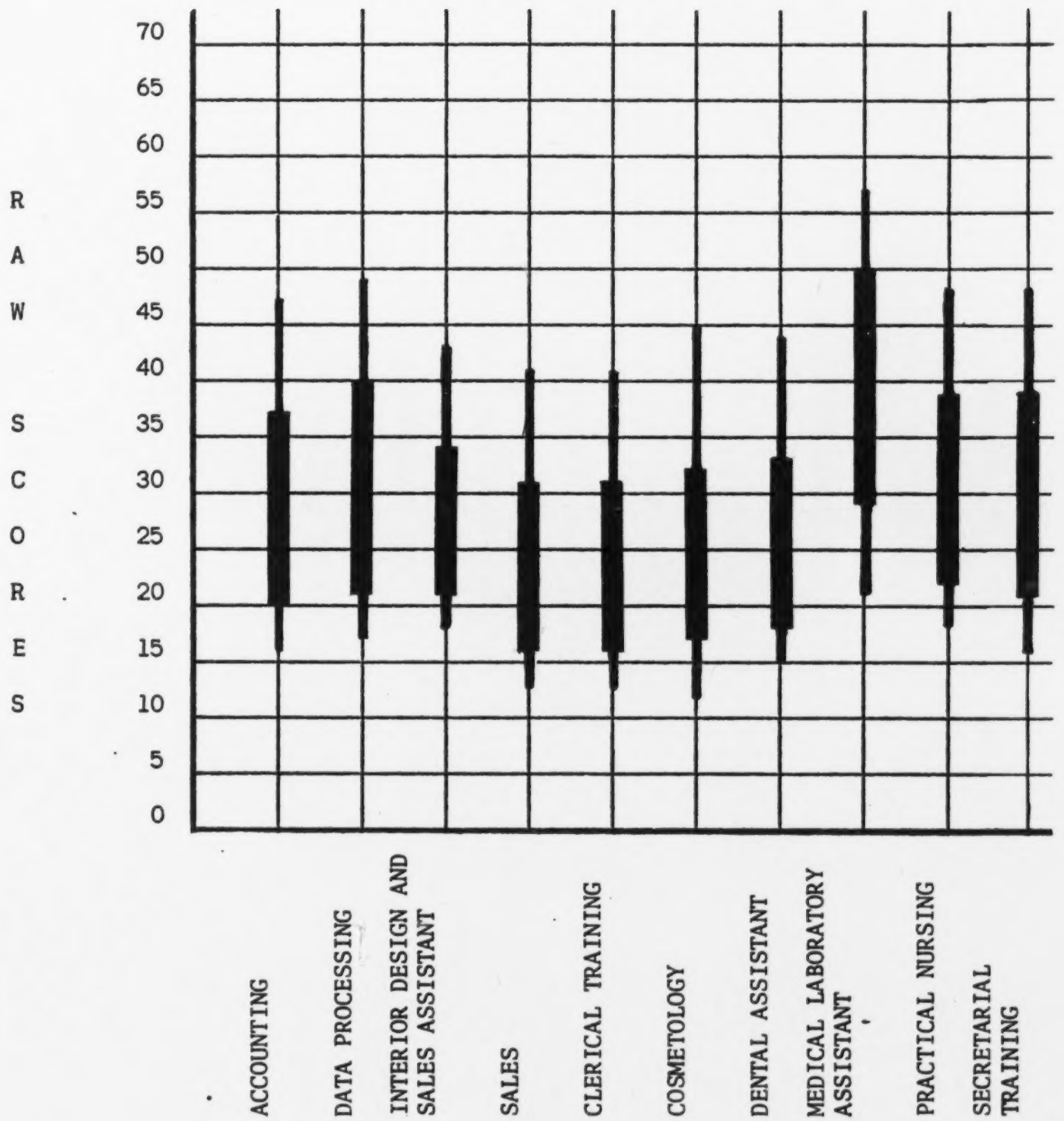
PROFILE SHEET



PROJECT MINI-SCORE TRAINING SUCCESS NORMS

MSAT - FORM C

PROFILE SHEET



APPENDIX E

MSAT PROFILES
EMPLOYMENT SUCCESS NORMS

page

CLUSTER I

PRIMARILY MALE CURRICULA 23

Automotive
Carpentry
Electronics
Machine Shop
Mechanical Drafting and Design
Power and Home Electricity
Welding

CLUSTER II

CURRICULA WITH BOTH MALE AND FEMALE . . . 23

Accounting
Data Processing

CLUSTER III

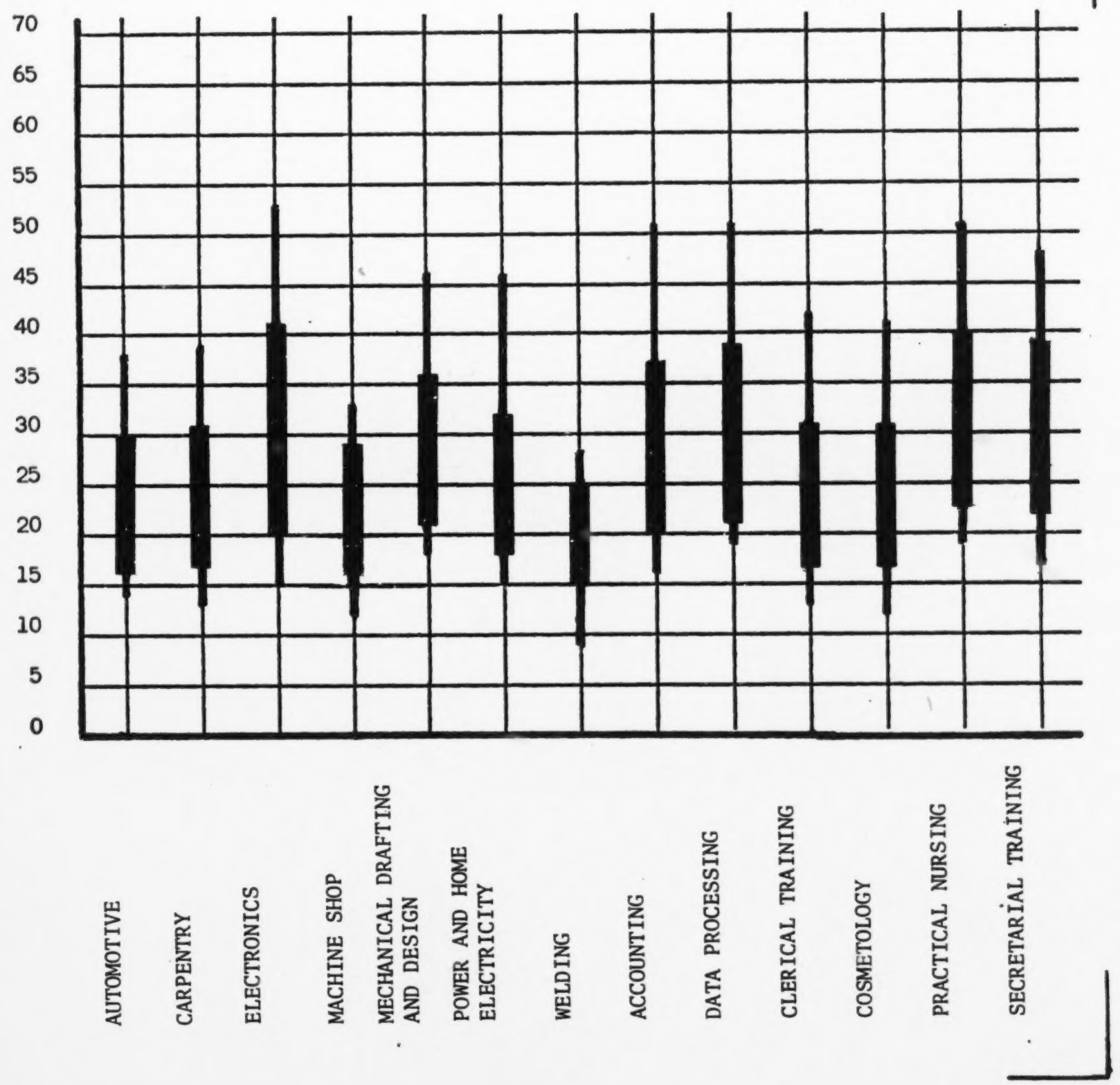
PRIMARILY FEMALE CURRICULA 23

Clerical Training
Cosmetology
Practical Nursing
Secretarial Training

PROJECT MINI-SCORE EMPLOYMENT SUCCESS NORMS

MSAT - FORM C

PROFILE SHEET



APPENDIX F

VDI AND MSAT (FORM A) MEANS, STANDARD DEVIATIONS, AND NUMBER OF OBSERVATIONS FOR GROUPS USED IN PREPARING TRAINING SUCCESS NORMS

page

PRIMARILY MALE CURRICULA 25

Agri-Technology
Aircraft Mechanics
Architectural Drafting
Automotive
Carpentry
Chefs and Cooks
Diesel Mechanics
Electronics
Farm Equipment Mechanics
Fluid Power Technology
Machine Shop
Mechanical Drafting and Design
Mechanical Refrigeration, Air Conditioning, and Appliance Repair
Plumbing and Sheet Metal
Power and Home Electricity
Printing and Graphic Arts
Welding

CURRICULA WITH BOTH MALE AND FEMALE 26

Accounting
Data Processing
Interior Design and Sales Assistant
Sales

PRIMARILY FEMALE CURRICULA 26

Clerical Training
Cosmetology
Dental Assistant
Medical Laboratory Assistant
Practical Nursing
Secretarial Training

VDI AND MSAT (FORM A) MEANS, STANDARD DEVIATIONS AND NUMBER OF OBSERVATIONS TRAINING SUCCESS NORMS

CURRICULUM	VDI			MSAT		
	N	$\bar{X}$	S	N	$\bar{X}$	S
PRIMARILY MALE CURRICULA						
Agri-Technology	115	37.01	4.55	86	25.34	9.56
Aircraft Mechanics	103	38.91	4.50	69	30.62	9.85
Architectural Drafting	53	37.38	4.54	47	27.64	8.26
Automotive	495	36.61	4.67	381	24.49	8.83
Carpentry	181	36.62	4.90	148	24.28	8.51
Chefs and Cooks	61	35.11	5.17	41	21.32	7.76
Diesel Mechanics	69	38.30	3.88	48	26.46	10.02
Electronics	202	37.88	4.03	159	31.53	10.23
Farm Equipment Mechanics	72	36.90	3.72	66	24.59	7.79
Fluid Power Technology	51	37.61	3.89	45	30.67	10.84
Machine Shop	166	36.71	4.55	131	24.33	8.28
Mechanical Drafting and Design	251	37.53	4.10	204	30.21	9.11
Mech. Refrig., Air Cond., & Appl. Repair	56	35.61	4.88	32	22.97	9.40
Plumbing and Sheet Metal	49	35.71	5.26	26	20.00	6.08
Power and Home Electricity	207	37.08	5.05	150	27.39	10.27
Printing and Graphic Arts	80	36.42	4.60	63	26.79	10.92
Welding	254	35.70	5.26	194	22.51	8.05

$\bar{X}$ = Mean S = Standard Deviation N = Sample Size

VDI AND MSAT (FORM A) MEANS, STANDARD DEVIATIONS AND NUMBER OF OBSERVATIONS TRAINING SUCCESS NORMS

CURRICULUM	VDI			MSAT		
	N	$\bar{X}$	S	N	$\bar{X}$	S
CURRICULA WITH BOTH MALE AND FEMALE						
Accounting	398	37.92	3.89	309	29.96	10.30
Data Processing	157	38.57	3.44	122	31.89	10.68
Interior Design & Sales Assistant	54	37.72	3.88	50	29.66	7.66
Sales	108	36.81	3.58	92	25.76	8.98
PRIMARILY FEMALE CURRICULA						
Clerical Training	551	37.10	4.19	413	24.68	8.87
Cosmetology	249	37.90	3.83	183	26.36	9.89
Dental Assistant	52	39.50	3.63	38	28.03	8.54
Medical Lab Assistant	49	40.16	3.39	30	41.93	11.56
Practical Nursing	509	39.94	3.15	368	32.26	10.34
Secretarial Training	739	38.70	3.55	555	31.64	10.32

APPENDIX G

VDI AND MSAT (FORM A) MEANS, STANDARD DEVIATIONS AND NUMBER OF OBSERVATIONS FOR GROUPS USED IN PREPARING EMPLOYMENT SUCCESS NORMS

page

PRIMARILY MALE CURRICULA 28

Automotive
Carpentry
Electronics
Machine Shop
Mechanical Drafting and Design
Power and Home Electricity
Welding

CURRICULA WITH BOTH MALE AND FEMALE . . . 28

Accounting
Data Processing

PRIMARILY FEMALE CURRICULA 28

Clerical Training
Cosmetology
Practical Nursing
Secretarial Training

VDI AND MSAT (FORM A) MEANS, STANDARD DEVIATIONS AND NUMBER OF OBSERVATIONS EMPLOYMENT SUCCESS NORMS

CURRICULUM	VDI			MSAT		
	N	$\overline{X}$	S	N	$\overline{X}$	S
PRIMARILY MALE CURRICULA						
Automotive	130	36.79	4.21	108	24.43	8.50
Carpentry	64	36.33	4.82	59	24.37	8.13
Electronics	51	38.98	3.95	40	32.12	12.20
Machine Shop	68	37.28	4.39	59	23.61	7.32
Mechanical Drafting & Design	82	37.62	3.52	72	30.39	8.84
Power and Home Electricity	87	37.74	4.09	74	27.04	10.70
Welding	51	37.20	4.93	40	20.27	6.07
CURRICULA WITH BOTH MALE AND FEMALE						
Accounting	162	38.14	3.89	132	30.18	11.21
Data Processing	65	38.80	3.34	55	32.13	10.31
PRIMARILY FEMALE CURRICULA						
Clerical Training	331	37.13	4.19	264	25.59	9.02
Cosmetology	103	37.58	3.83	85	25.65	9.17
Practical Nursing	334	40.11	3.08	249	33.10	10.40
Secretarial Training	480	38.73	3.43	382	32.01	10.11

$\overline{X}$ = Mean S = Standard Deviation N = Sample Size

APPENDIX H

MSAT FORM A - FORM C CONVERSION INFORMATION
SUPPLIED BY THE UNIVERSITY OF MINNESOTA
STUDENT COUNSELING BUREAU

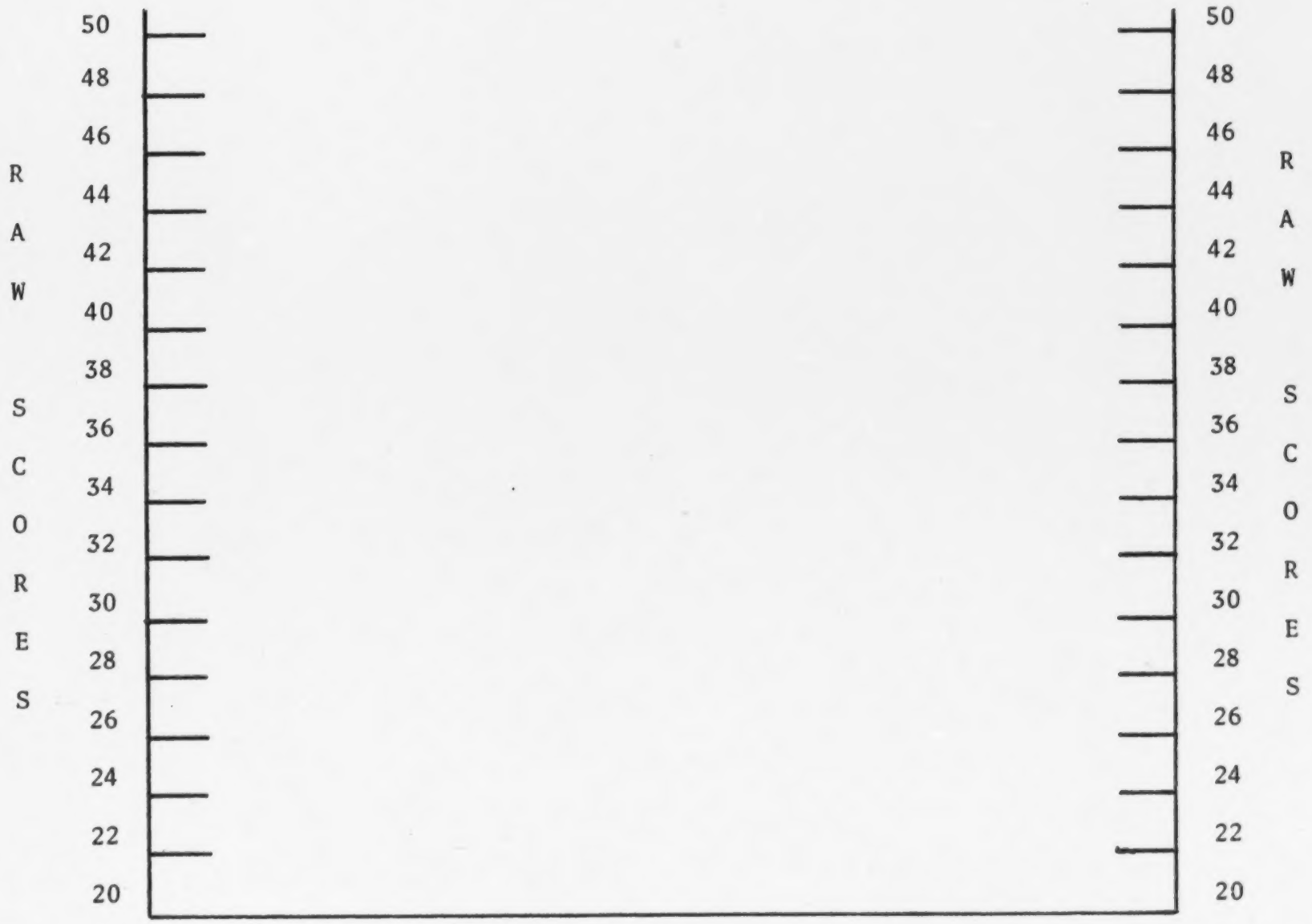
Form C Raw Score	Form A Raw Score
64+	68+
62-63	66-67
61	65
60	64
59	63
58	61-62
57	60
56	59
55	58
54	58
53	57
52	56
51	54-55
50	53
49	52
48	51
47	50
46	48-49
45	47
44	46
43	45
42	44
41	43
40	42
39	41

Form C Raw Score	Form A Raw Score
38	40
37	39
36	38
35	37
34	36
33	35
32	34
31	32-33
30	31
29	30
28	29
27	28
26	27
25	26
24	25
23	24
22	23
21	22
20	21
19	20
18	19
17	18
16	17
14-15	15-16
12-13	13-14
1-11	0-12

STUDENT PROFILE SHEET - VDI SCORE

NAME _____ DATE _____

CURRICULUM APPLYING FOR _____



STUDENT PROFILE SHEET - MSAT SCORE

NAME _____ DATE _____

CURRICULUM APPLYING FOR _____

OTHER PROJECT MINI-SCORE PUBLICATIONS

1. Nelson, H. F. and Pucel, D. J. Area School Student Selection Project: Selected Descriptive Data Gathered on Approximately 6400 Applicants to the Cooperating Area Vocational-Technical Schools of Minnesota During the Period from October 1, 1966 to July 1, 1967. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1967.

2. Pucel, D. J. "The Centour Methodology Applied to Vocational Student Counseling and Admission." Journal of Industrial Teacher Education, Fall, 1969.

3. Pucel, D. J. The Student: An Integral Part of Vocational Program Development and Evaluation. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1969.

4. Pucel, D. J. and Nelson, H. F. Area School Student Selection Project: A Preliminary Look at the Test Battery Data. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1967.

5. Pucel, D. J., Nelson, H. F. and Wheeler, D. N. A Comparison of the Employment Success of Vocational-Technical School Graduates, Drop-Outs, and Persons Not Admitted to Vocational Programs. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1971.

6. Pucel, D. J., Nelson, H. F., and Wheeler, D. N. Differentiating Among Graduates of Vocational-Technical Curriculums. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1970, ERIC 043-757; VT 011-749.

7. Pucel, D. J., and Nelson, H. F. General Aptitude Test Battery (B-1002 Form B) Training Success Norms. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1969, ERIC 029-992; VT 008-629

8. Pucel, D. J., and Nelson, H. F. General Aptitude Test Battery (B-1002 Form B) Training Success Norms Including Supplement One. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1970.

9. Pucel, D. J., and Nelson, H. F. Minnesota Vocational Interest Inventory Training Success Norms. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1969.

10. Pucel, D. J., and Nelson, H. F. Minnesota Vocational Interest Inventory Training Success Norms Including Supplement One. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1970, ERIC 042-025; VT 011-393.

11. Pucel, D. J., and Nelson, H. F. Project MINI-SCORE: An Interim Report, 1966-69, rev. ed. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minneapolis, 1969.

12. Pucel, D. J., and Nelson, H. F. Project MINI-SCORE: Some Preliminary Implications for Vocational Guidance. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1969, ERIC 025-658; VT 007-582.

13. Pucel, D. J., Nelson, H. F., and Wheeler, D. N. "Ouestionnaire Follow-Up Returns as a Function of Incentives and Responder Characteristics." Vocational Guidance Quarterly, March, 1971.

14. Pucel, D. J., and Nelson, H. F., and Wheeler, D. N. Questionnaire Follow-Up Returns as a Function of Incentives and Responder Characteristics. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1970, ERIC 037-536; VT 010-042.

15. Pucel, D. J. and Nelson, H. F. What Happens to Graduates of Minnesota's Area Vocational-Technical Schools. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1969.

16. Pucel, D. J., and others. Vocational Maturity and Vocational Training. Minneapolis: Project MINI-SCORE, Department of Industrial Education, University of Minnesota, 1970.

VOLUMES OF PROJECT-MINI SCORE* FINAL REPORT

PROJECT MINI-SCORE FINAL REPORT

PROJECT MINI-SCORE FINAL TECHNICAL REPORTS:

Report One - The Ability of Standardized Test Instruments to Predict Training Success and Employment Success

Report Two - The Ability of Standardized Test Instruments to Differentiate Membership in Different Vocational-Technical Curricula

Report Three - General Aptitude Test Battery
Training Success Norms and Employment Success Norms

Report Four - Minnesota Vocational Interest Inventory
Training Success Norms and Employment Success Norms

Report Five - Minnesota Scholastic Aptitude Test and Vocational Development Inventory
Training Success Norms and Employment Success Norms

*The project was commonly known as Project MINI-SCORE (Minnesota Student Characteristics and Occupational Related Education) but was originally proposed with the formal title: Characteristics of Full-Time Students in Post-Secondary Trade Courses; U.S.O.E. project number HRD 5-0148.